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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference D'ALCH03A12	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/IT2004/000269	International filing date (day/month/year) 13.05.2004	Priority date (day/month/year) 18.07.2003	
International Patent Classification (IPC) or national classification and IPC A61F13/64			
Applicant D'ALCINI, Franco			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 10 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 11.02.2005		Date of completion of this report 06.10.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465		Authorized Officer Settele, U Telephone No. +49 89 2399-7150	



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Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

Description, Pages

1-7 filed with telefax on 26.09.2005

Claims, Numbers

1-5 filed with telefax on 26.09.2005

Drawings, Sheets

1/3, 2/3 as originally filed

3/3 received on 11.02.2005 with letter of 11.02.2005

- ☐
- a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-5
Inventive step (IS)	Yes: Claims	
	No: Claims	1-5
Industrial applicability (IA)	Yes: Claims	1-5
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following documents:
D1: US 2002/193776 A1 (FERNFORS INGEMAR) 19 December 2002 (2002-12-19)
D6: US-A-5 445 628 (MASON MICHAEL W ET AL) 29 August 1995 (1995-08-29)
2. The amendments filed introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)b PCT.
 - 2.1 The applicant filed with his letter of 11.02.2005 an amendment on p. 5, l. 19-23 of the description filed with fax on 26.9.2005. The amendment concerned on this page is "moreover, the central section of the belt (CE) has a monolithic structure and is not connected with the right and left ends of the belt (C)." For this amendment no basis can be found in the application as originally filed.
The applicant argued in his letter of 30.5.2005 that a fictional partition of belt (C) into three sections (4,5 and CE) can be derived from the description and the drawings. However, the description does not disclose the term "monolithic structure".
Furthermore, this term does not have any recognized meaning in the art and is thus in addition unclear. Moreover, no basis can be found neither in the description nor in the drawings that the central section is not connected with the right and left ends of the belt.

Therefore, this amendment of the description should have been deleted.

- 2.2 Furthermore, the applicant filed a new claim 1 with his letter of 30.5.2005 introducing the following amendments in the characterizing part:
 - a.) the folded right and left end (4,5) of the belt (C) are also compressed by means of lamination, it being provided that the surface of at least one of the lamination rolls features a dense regular series of small points capable of perforating the overlapped layers of the ends (4,5)
 - b.) including the central section (CE) of the belt (C) so that all the folded and

overlapped sections (4,5 and CE) of the belt (C) adhere and to each other, thus allowing unfolding with minimum traction of ends (4 and 5), when the pad is used.

Basis for amendment a.) can be found on p. 4, l. 13-19 of the description as originally filed. Therefore, this part of the amendment does not go beyond the content of the application as originally filed.

However, for the amendment b.) no basis can be found neither in the description nor in the drawings.

Thus, the subject-matter of new claim 1 extends beyond the content of the application as filed, contrary to Article 34(2)b PCT and cannot form basis for the examination of novelty and inventive step.

Basis for assessment of novelty and inventive step will thus be the subject-matter of claim 1 as filed with letter of 11.2.2005.

3. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 does not involve an inventive step in the sense of Article 33(3) PCT.

The document D6 is regarded as being the closest prior art to the subject-matter of claim 1, and discloses (the references in parentheses applying to this document):

- incontinence pad, of the type comprising a front transversal border (2) and back transversal border (3) which assume a pant-like shape leaving the hips uncovered when the pad is worn and a belt (C) fastened to the back border (3) and long enough to surround the waist and be fixed on the outside of the front border (2) (col. 2, l. 26-35; fig. 1-3), incontinence pad characterized in that:
 - a central section (CE) of the belt (C) is fastened on the outside of the back border (3) and features right and left ends (4,5) designed to surround and being fastened in the outside of the front border (2) when the pad is used (fig. 1-3; col. 9, l. 60-col. 10, l. 3).

The subject-matter of claim 1 therefore differs from this known D6 in that D6 does not disclose:

- said right and left ends (4,5) of the belt (C) are folded and compressed one against the other and both against the external side of said central section (CE) of the belt (C), when the pad is not used.

The problem to be solved by the present invention may therefore be regarded as providing two semi-belts in such a way as not to preclude normal packaging of incontinence pads (p. 2, l. 31-o. 3, l. 1 of the description).

However the feature "said right and left ends (4,5) of the belt (C) are folded and compressed one against the other and both against the external side of said central section (CE) of the belt (C), when the pad is not used" is already described in document D1 (fig. 1) as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal design option to include this feature in the D6 in order to solve the problem posed.

4. DEPENDENT CLAIMS 2-5

Dependent claims 2-5 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect inventive step (Article 33 (3) PCT):

D1 (fig.1 ; paragraph 11,29,32,34), D2 (fig. 1,2; paragraphs 6,7,22,24,25), D3 (p. 3, l. 28-p. 4, l. 4; p. 4, l. 28-p. 5, l. 6), D4 (paragraphs 21-23,26), D5 (fig. 1; paragraph 10,27-30,33,35) and D7 (paragraphs 5,7,21,22) already disclose the subject-matter of dependent claims 2-5.

5. Provided that the feature:

"including the central section (CE) of the belt (C) so that all the folded and overlapped sections (4,5 and CE) of the belt (C) adhere and to each other, thus allowing unfolding with minimum traction of ends (4 and 5), when the pad is used"
of newly filed claim 1 would be deleted a newly filed claim entering in the regional

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phase would appear to be novel and inventive over the prior art cited.

Description

Incontinence pads

The present patent application refers to an incontinence pad provided with two folding semi-belts.

As it is known, the function of incontinence pads is to contain and absorb the organic products of evacuation (urine and faeces) in individuals to avoid uncontrolled
5 diffusion on beds or clothes.

Traditional incontinence pads are composed of three layers of different materials: an external layer of filtering materials, a central thicker layer of absorbing fibres and an external layer of waterproof film.

Incontinence pads are basically shaped as a clepsydra and this shape allows
10 them to fit as underpants once they are worn by the user.

When the traditional incontinence pad is worn by the user, the polyethylene lateral flaps located in the back and front section overlap on the user's hips and are held in place by means of adhesive bands, thus allowing to adjust the circumference of the incontinence pad to the user's physical characteristics.

15 The aforementioned overlapping of the flaps on the user's hips is the main drawback of the traditional technology.

The presence of the overlapped flaps on the user's hips completely prevents perspiration in that area.

If we consider that the overlapped flaps of incontinence pads are made with
20 anti-perspirant waterproof material, it appears evident that, in addition to cause excessive sweating, traditional incontinence pads may cause severe cutaneous

Irritation to the user.

The purpose of the present invention is to provide an incontinence pad that, in spite of having a general structure similar to the traditional one, features an innovative fastening system without the disadvantageous overlapping of the lateral
5 waterproof flaps on the user's hips.

The shape of the incontinence pad of the invention is basically the same as traditional incontinence pads, with the only significant difference that it does not feature the protruding lateral flaps (on the back and front section) used by the traditional technology to hold the incontinence pad in place on the user's hips.
10 While on one hand the absence of the lateral flaps overlapped on the user's hips improves perspiration, on the other hand it prevents from using the traditional fastening system with lateral adhesive bands.

For this reason, the incontinence pad of the invention is provided with a closing belt on the back section. When the closing belt is not used, the right and left
15 ends of the belt (semi-belts) are folded one on top of the other.

When the incontinence pad is worn by the user – that is to say when the incontinence pad is used as underpants – the two semi-belts are stretched out by pulling them slightly and surround the user's waist from the back to the front, with one semi-belt on the left side and one semi-belt on the right side.

20 In view of the above, the user's hips are no longer covered by a double layer of waterproof anti-perspirant material. Instead they are covered by the semi-belts, which are made of a normally perspiring material.

The internal side of the free end of one semi-belt is provided with an insert of adhesive material that allows to hold the belt in place on the front section of the
25 incontinence pad when the same is worn by the user.

The specific fastening point of the free end of each semi-belt can be established according to the size of the user's waist, thus ensuring perfect adjustment of the incontinence pad/underpants to the user's body.

In particular, the user can try different fastening positions, since each semi-belt can be attached and detached several times on the front section of the incontinence pad.

US patent No. 2002/0193776 A1 describes an absorbent article comprising a front portion, a back portion and a crotch portion therebetween to be folded in such a way that the article assumes a pant-like shape, leaving the hips uncovered; said absorbent article being also provided with a belt attached to the back portion and long enough to surround the waist and be fixed on the outside of the front portion. More precisely said belt is not a single piece but is composed of first and second belt halves the ends of which are fastened, during packaging, to the aforementioned back portion of the absorbent article, on the permeable topsheet which is destined to be in contact with the user's skin.

Also during packaging said two halves remain substantially flat along their entire length when brought against said topsheet on top of each other.

US patent No. 2001/0034512 A1 describes an absorbent article such as an incontinence guard basically identical to the article illustrated in US patent No. 2002/193776 A1 except for the fact that during packaging the two halves are folded in accordion-like fashion and each forms an accordion-like folded package which is arranged in a pocket at each side edge of the rear portion of the absorbent article.

Also in the item according to this second device the two belt halves are fastened on the inside of the permeable sheet which remains on the internal side of the pant when the article is used.

A further purpose of the invention according to the present application is to provide a new method of folding and fastening said belt to the back portion of the incontinence pad in such a way that the two semi-belts are not allowed to move freely thus not impairing packaging and handling operations.

5 As illustrated in details in the description below, special attention has been paid to the way the semi-belts are folded and fastened on the back of the incontinence pad.

When the incontinence pad is not used, the two semi-belts must be positioned in such a way as not to preclude normal packaging of incontinence pads.

10 At the same time, the two semi-belts must be folded and fastened in such a way as to remain one against the other and be stretched out completely by the user with his/her hands.

In particular, the compressed steady position of the semi-belt is extremely useful during packaging and handling. Should the semi-belts be allowed to move
15 freely, packaging and handling operations would be severely impaired.

The advantages of the incontinence pad of the invention appear evident from the aforementioned generic description: It favours perspiration on the user's hips, has excellent wearability (meaning the possibility of adjusting to the specific requirements of different users), and reduces the quantity of materials and glue
20 used compared to traditional incontinence pads, thanks to the elimination of lateral flaps.

It is worthless saying that the reduced consumption of these parts reduces the production cost of the incontinence pad of the invention and also the environmental impact related to the disposal of throwaway incontinence pads.

25 For major clarity the description of the invention continues with reference to

the enclosed drawings, which are intended for purposes of illustration only and not in a limiting sense, whereby:

- Figs. 1 to 4 are perspective views of the incontinence pad of the invention in operational condition in the different steps of practical application on the user;
- 5 - Figs. 5 to 7 show the different steps of the folding process for the belt of the incontinence pad;
- Fig. 8 is a plan view of a section of the belt.

With reference to Figs. 1 to 4, the incontinence pad of the invention (1), which basically has the traditional "clepsydra" shape, is characterised by the fact that
10 the length of the front transversal border (2) and back transversal border (3) only allows to cover the user's back and stomach - and not the hips - when the incontinence pad is worn.

As mentioned above, the presence of the two free lateral areas provides the incontinence pad (1) with a level of comfort and hygiene that is unknown in
15 traditional incontinence pads.

A belt (C) is fastened on the outside of the back transversal border (3), whose right and left ends (4, 5) - or semi-belts - are folded one against the other according to the preferred sequence shown in Figs. 5 to 7.

It must be pointed out that the belt (C) is fastened on the outside of the back
20 transversal border (3), on the sheet which remains on the external side of the pant when the incontinence pad is used.

Moreover, the central section of the belt (CE) has a monolithic structure and is not connected with the right and left ends of the belt (C).

As mentioned earlier, the function of the semi-belts (4, 5) is to connect the
25 front border (2) and back border (3) of the incontinence pad (1) from both sides,

thus surrounding the user's hips without preventing perspiration.

The semi-belts (4, 5) must be provided with perspirant properties and can be made of different suitable materials, such as "non-woven" transversally non-elastic fabric of single-layer or double-layer type, or "elastified non woven" fabric or
5 composite material (partially elastic and partially rigid).

To compress and stabilise the two semi-belts (4, 5) one against the other in folded position, the two semi-belts (4, 5) are subjected to compression, preferably by means of lamination.

In order to improve the efficacy of compression on the semi-belts (4, 5) the
10 surface of one of the lamination rolls can be provided with a dense series of small points to perforate the layers of the folding section, thus creating a sort of punctiform union between the different layers.

Fig. 8 shows a section of the semi-belt after being subjected to this type of operation, in which number (6) shows the perforations created by the punctiform
15 union.

Alternatively, the union between the two semi-belts in contact position can be obtained by means of ultrasounds.

In both cases, however, the user can separate the different sections of the folded part by simply pulling the free ends of the two semi-belts (4, 5) towards the
20 front of the incontinence pad (1), as shown in Fig. 2.

Once the two semi-belts (4, 5) have been completely unfolded, the user simply needs to fasten them on the front of the incontinence pad (1).

To that end, the two sides of the front section of the incontinence pad (1) are provided with Velcro (7a, 7b) or other adhesive materials in order for the internal
25 sides of the semi-belts (4, 5) to adhere, according to the sequence shown in Figs. 3

and 4.

With reference to the same figures, the right semi-belt (4) is fastened against the front adhesive insert (7a) and the left semi-belt (5) is fastened against the corresponding adhesive insert (7b).

5 The length of the semi-belts (4, 5) is such that the semi-belts (4, 5) can overlap approximately on the user's belly-button.

To ensure the stable fastening of the two semi-belts (4, 5), the free end of the left semi-belt (5) is internally provided with an adhesive insert (5a) that allows for fastening it on the external side of the right semi-belt (4), as shown in Fig. 4.

10 In view of the fact that the front adhesive inserts (7a, 7b) are capable of adhering anywhere on the internal side of the two semi-belts (4, 5) it appears evident that the two semi-belts (4, 5) are finally fastened against the adhesive inserts after adjusting their tension according to the user's waist.

The user can therefore try different fastening positions by attaching and
15 detaching the two semi-belts (4, 5) to the fastening inserts (7a, 7b) several times before finding the best position for each user.

Claims

- 1) Incontinence pad, of the type comprising a front transversal border (2) and a back transversal border (3) designed to assume a pant-like shape leaving the hips uncovered when the pad is worn and a belt (C) fastened to the back border (3) and long enough to surround the waist and be fixed on the outside of the front border (2), it being provided that a central section (CE) of the belt (C) is fastened on the outside of the back border (3) and features right and left ends (4, 5) designed to surround and be fastened on the outside of the front border (2) when the pad is used; incontinence pad characterised in that:
- said right and left ends (4, 5) of the belt (C) are folded and compressed one against the other and both against the external side of said central section (CE) of the belt (C), when the pad is not used;
 - the folded right and left ends (4, 5) of the belt (C) are also compressed by means of lamination, it being provided that the surface of at least one of the lamination rolls features a dense regular series of small points capable of perforating the overlapped layers of the ends (4, 5), including the central section (CE) of the belt (C) so that all the folded and overlapped sections (4, 5 and CE) of the belt (C) adhere and to each other, thus allowing unfolding with minimum traction of ends (4 and 5), when the pad is used.
- 2) Incontinence pad as defined in claim 1, characterised by the fact that the free end of the left semi-belt (5) is internally provided with an adhesive insert (5a) that allows for fastening it on the external side of the right semi-belt (4) after overlapping the semi-belts on the incontinence pad (1).
- 3) Incontinence pad as defined in one or more of the preceding claims, characterised by the fact that the belt (C) is made of single-layer transversally non-elastic material,

consisting in "non woven" co-extruded fibres.

4) Incontinence pad as defined in one or more of the preceding claims, characterised by the fact that the belt (C) is made of double-layer transversally non-elastic material, consisting in "non woven" co-extruded fibres.

- 5 5) Incontinence pad as defined in one or more of the preceding claims, characterised by the fact that the belt (C) is made of composite material (partially elastic and partially rigid) of co-extruded or laminated fibres.

3/3

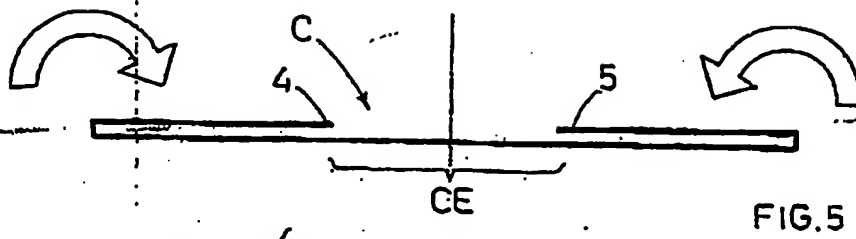


FIG. 5

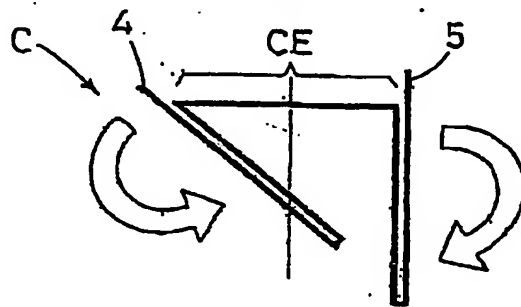


FIG. 6

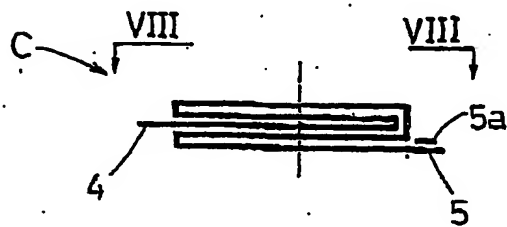


FIG. 7

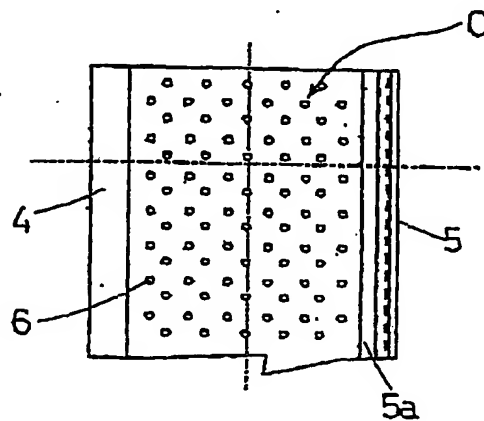


FIG. 8